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Resonant generation of plasma oscillations by a plane gravitational wave

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Abstract

An exact solution of the universal Maxwell equations linearized in the amplitude of the induced field is found with the help of a previously found exact solution of the kinetic equation with a model collision integral. Two oscillation modes arise under the action of a gravitational wave in a plasmalike medium: an undamped wave with the frequency of the gravitional wave and a damped one with the plasma frequency. When these frequencies coincide, a resonance arises, as a result of which the amplitude of the electric oscillations increases sharply. © 1985 Plenum Publishing Corporation.

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